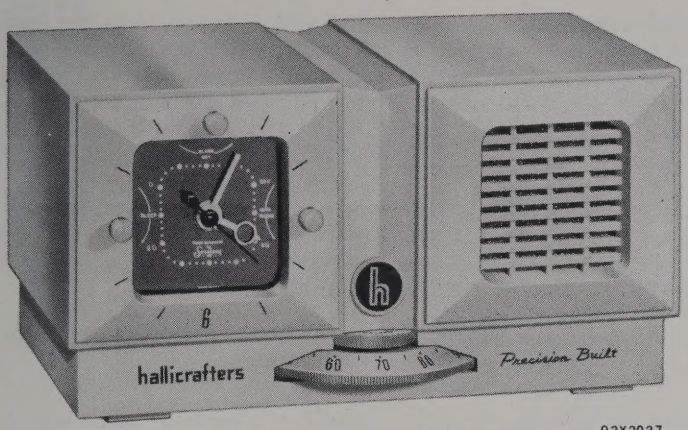
SERVICE INSTRUCTIONS

ATOM CLOCK RADIO

MODELS ATCL-9, 10, and 11 (Run 1)



HALLICRAFTERS ATOM CLOCK RADIO

Models ATCL-9 (mahogany brown), ATCL-10 (forest green) ATCL-11(birch white)

SPECIFICATIONS

Tubes	5 including 1 rectifier
Power Supply	105-120 volts 60 cycles AC only
Wiring	Hallicrafters' Foto-Etch circuit
Clock	Sessions, self starting type
Frequency Coverage	535 - 1620 KC
Intermediate Frequency	455 KC
Speaker Voice Coil Impedance	3.2 ohms
Antenna	Built-in loop

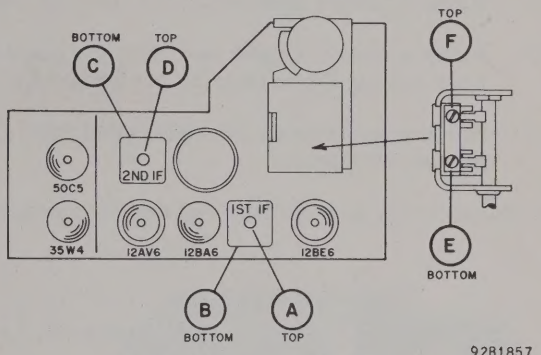


Fig. 1. Top View of Chassis Showing Location of Alignment Adjustments

ALIGNMENT PROCEDURE

TO AVOID SHOCK HAZARD, CONNECT POWER THROUGH AN ISOLATION TRANSFORMER

- Connect output meter across voice coil.
- Set volume control at maximum.
- Use a non-metallic alignment tool.
- Refer to Fig. 1 for location of alignment adjustments.
- Generator must have modulated output and cover 455 KC, 1400 KC and 1620 KC.
- To avoid AVC action use lowest output setting of generator that gives a satisfactory reading on meter.

Step	Signal General Connections	Generator Frequency	Receiver Dial Setting	Adjust for Maximum Output
1	High side thru .1 mfd. capacitor to stator plates of top section of tuning gang. Low side to the frame of the tuning gang.	455 KC	1000 KC	A-B (1st IF) and C-D (2nd IF)
2	Construct a loop of a few turns of wire and connect it to the signal generator. Loosely couple this loop to the loop antenna of the receiver.	1620 KC	Tuning gang fully open.	E (osc. trimmer)
3	Same as Step 2.	1400 KC	1400 KC	F (ant. trimmer)

the hallicrafters co.

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IMPORTANT

READ CAREFULLY BEFORE REPLACING COMPONENT PARTS

The ATOM CLOCK RADIO employs the new Hallicrafters FOTO-ETCH CIRCUIT. This printed circuit replaces the conventional chassis wiring as found in ordinary receivers. The circuit is printed on the nonconducting chassis and the solder is applied by a dipping process after the mounting of the component parts. Extreme care must be used when replacing parts that are bound by solder to the printed circuit. It is however entirely practicable to replace any part of the receiver.

When replacing components, such as resistors, that have leads accessible from the top of the chassis, clip the leads as close as possible to the old part. This will permit the soldering of the new part to the old leads without disturbing the printed circuitry.

Whenever soldering operations become necessary on the underside of the chassis use a small tipped, low wattage soldering iron. Rosin core solder of the type ordinarily used for radio work will be satisfactory for repair purposes, If it becomes necessary to break a lead for test purposes, scratch across the surface with a knife or other sharp instrument. The connection may be restored by bridging across the gap with solder. Do not remove any more material than necessary to break the connection as solder will not adhere to the chassis once the printed copper surface has been removed.

To remove components, such as IF transformers, that have terminals protruding from the underside of the chassis proceed as follows:

1. Using a cutting pliers clip the terminals as close as possible to the bottom of the chassis.
2. Using a small tipped low wattage soldering iron and a small stiff bristle brush, remove the excess solder surrounding the remaining portion of the terminals.
3. Remove any remaining solder that may still bind the terminals to the circuit by means of a knife or other sharp pointed instrument

The old part may now be removed and the replacement carefully soldered into position.

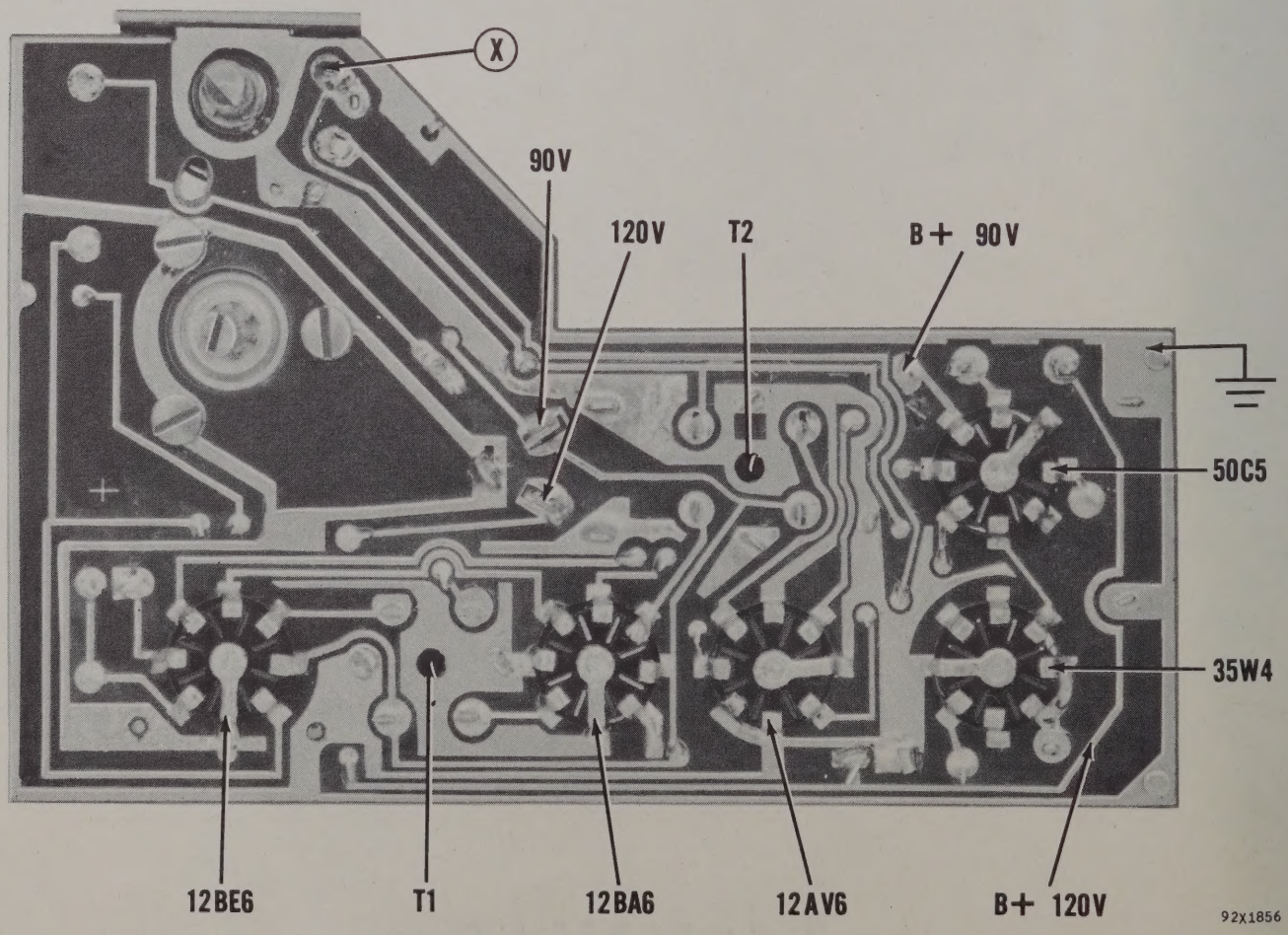
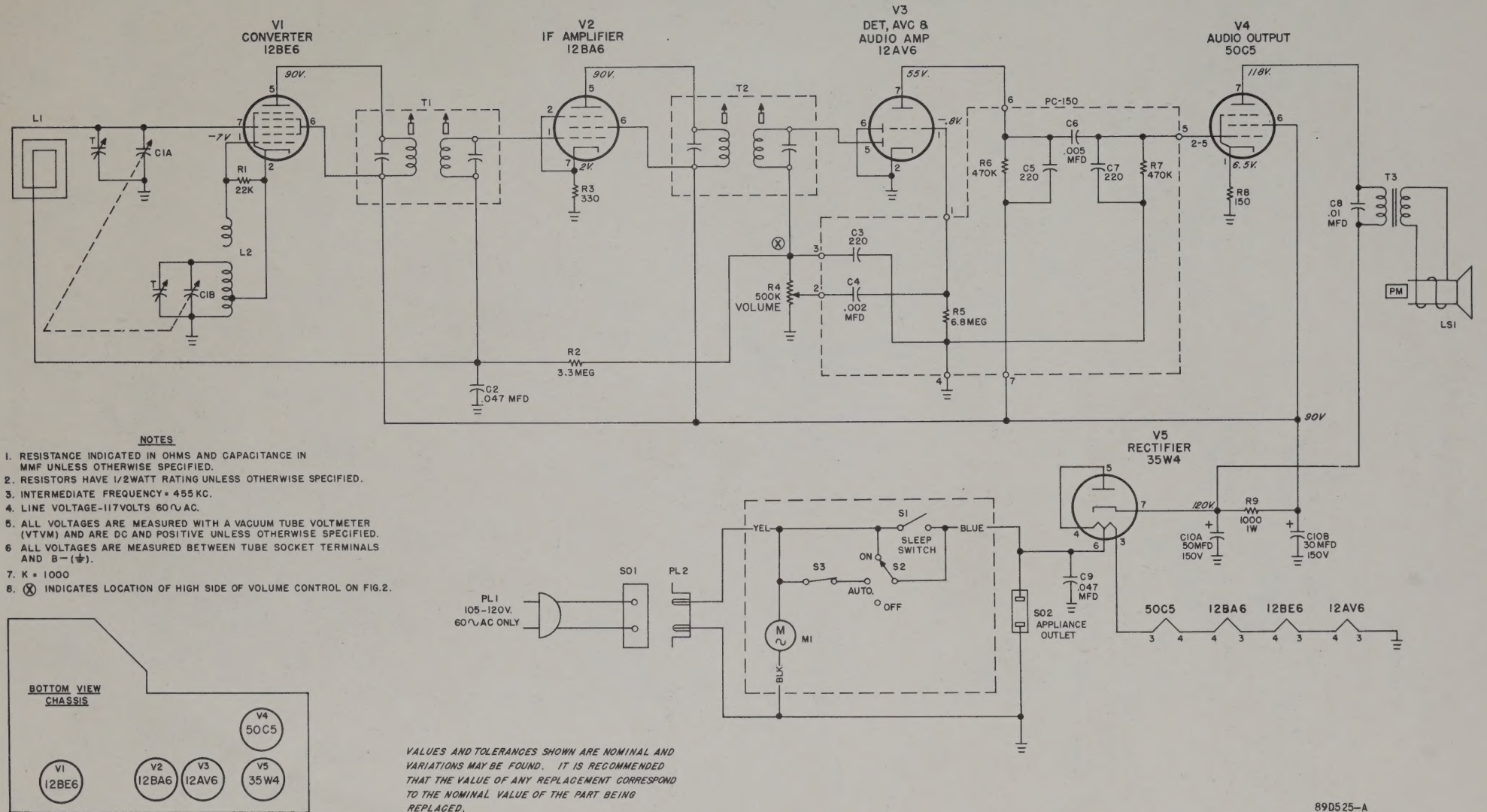


Fig. 2. Bottom Chassis View Showing Hallicrafters Foto-Etch Circuit

MODELS ATCL-9, 10, and 11
(Run 1)



NOTES

1. RESISTANCE INDICATED IN OHMS AND CAPACITANCE IN MMF UNLESS OTHERWISE SPECIFIED.
2. RESISTORS HAVE 1/2WATT RATING UNLESS OTHERWISE SPECIFIED.
3. INTERMEDIATE FREQUENCY = 455 KC.
4. LINE VOLTAGE-117VOLTS 60~AC.
5. ALL VOLTAGES ARE MEASURED WITH A VACUUM TUBE VOLTMETER (VTVM) AND ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED.
6. ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS AND B-(⏚).
7. K = 1000
8. (X) INDICATES LOCATION OF HIGH SIDE OF VOLUME CONTROL ON FIG.2.

VALUES AND TOLERANCES SHOWN ARE NOMINAL AND VARIATIONS MAY BE FOUND. IT IS RECOMMENDED THAT THE VALUE OF ANY REPLACEMENT CORRESPOND TO THE NOMINAL VALUE OF THE PART BEING REPLACED.

89D525-A

Fig. 3. Schematic Diagram

SERVICE PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number
	CAPACITORS	
C-1	Tuning capacitor, 2 section	48C312
C-2	.047 mfd. 200 V., molded tubular paper	46BS473L2
C-3,4,5,6,7	Part of Couplate PC-150 (see Miscellaneous Parts)	- - - - - -
C-8	.01 mfd. 600 V., tubular paper (part of speaker assembly LS-1)	- - - - - -
C-9	.047 mfd. 400 V., molded tubular paper	46BR473L4
C-10	50-30 mfd. 150 V., electrolytic	45A230
	RESISTORS	
R-1	22,000 ohms 10%, ½ watt; carbon	23X20X223K
R-2	3.3 megohms 10%, ½ watt; carbon	23X20X335K
R-3	330 ohms 10%, ½ watt; carbon	23X20X331K
R-4	500,000 ohms, variable; Volume control	25B1028
R-5,6,7	Part of Couplate PC-150 (see Miscellaneous Parts)	- - - - - - -
R-8	150 ohms 10%, ½ watt; carbon	23X20X151K
R-9	1000 ohms 10%, 1 watt; carbon	23X30X102K
	COILS AND TRANSFORMERS	
L-1	Loop antenna and cabinet back assembly	57D189
L-2	Coil, oscillator	51B1613
T-1,2	Transformer, 1st IF, 2nd IF	50C572
T-3	Transformer, audio output (part of speaker assembly LS-1)	- - - - -
	TUBE COMPLEMENT	
V-1	12BE6: converter	90X12BE6
V-2	12BA6: IF amplifier	90X12BA6
V-3	12AV6: detector, AVC and audio amplifier	90X12AV6
V-4	50C5: audio output	90X50C5
V-5	35W4: rectifier	90X35W4

Schematic Symbol	Description	Hallicrafters Part Number
	MISCELLANEOUS PARTS	
	Cabinet, plastic	
	for ATCL-9 (Mahogany Brown)	116F021
	for ATCL-10 (Forest Green)	116F022
	for ATCL-11 (Birch White)	116F023
	Knob, tuning	
	for ATCL-9 (Mahogany Brown)	15D616
	for ATCL-10 (Forest Green)	15D617
	for ATCL-11 (Birch White)	15D618
	Knob, volume	
	for ATCL-9 (Mahogany Brown)	15A556
	for ATCL-10 (Forest Green)	15A557
	for ATCL-11 (Birch White)	15A558
	Knob, clock control	
	for ATCL-9 (Mahogany Brown)	15A559
	for ATCL-10 (Forest Green)	15A560
	for ATCL-11 (Birch White)	15A561
M-1	Clock unit (includes switches S-1, S-2 and S-3)	80D135
	Crystal, clock	22C372
PC-150	Couplate, triode (includes C-3,4,5,6,7 and R-5,6,7)	49A027
	Grill cloth and baffle assembly	14C347
PL-1, SO-1	Line cord and plug assembly	87C1668-1
PL-2	Line cord interlock	10B536
	Printed circuit chassis (less all parts except tube sockets, chassis mtg. spring, wire jumpers, and terminals)	130D001
SO-2	Receptacle, AC	10A015
	Shield, tube	69A232
LS-1	Speaker assembly (includes C-8 and T-3)	85C146

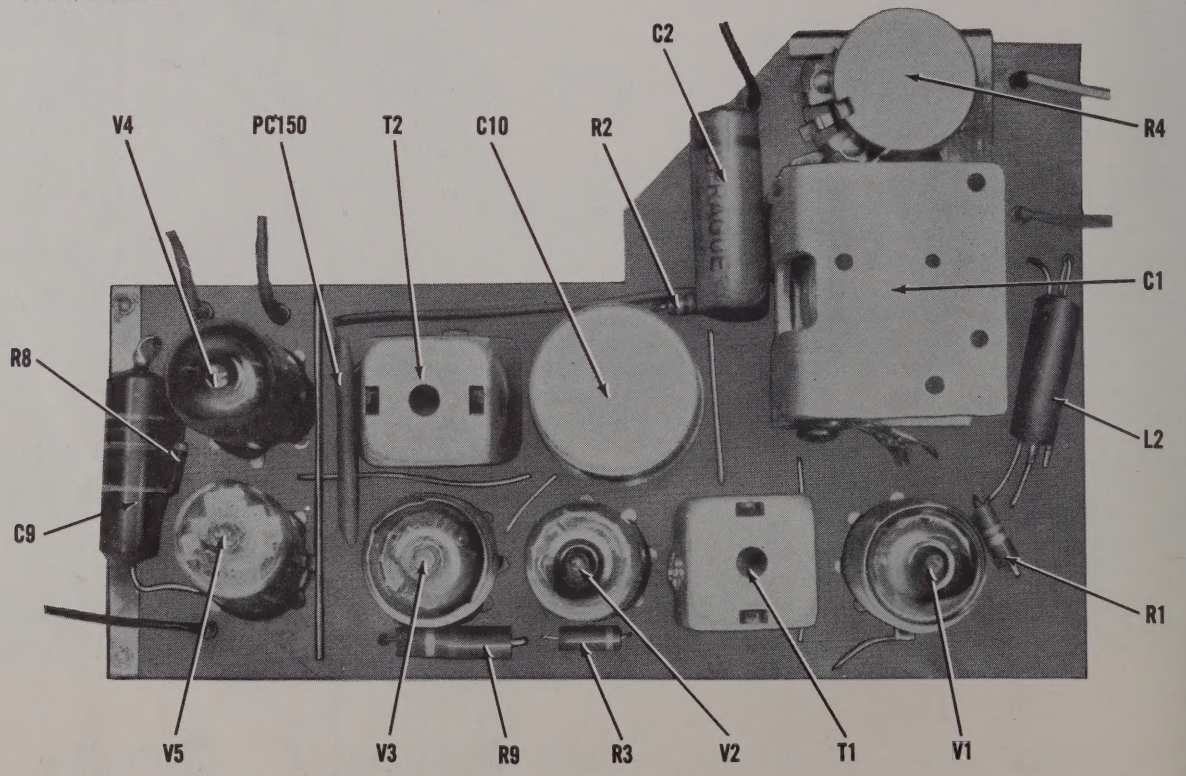


Fig. 4. Top View Showing Component Location